

10/729027

FILE 'CAPLUS' ENTERED AT 15:49:18 ON 26 AUG 2004

L1 1727 SEA ABB=ON PLU=ON (MORAXELL? OR M OR BRANHAMELL? OR B) (W) CATA
RRHAL?
L2 47 SEA ABB=ON PLU=ON L1 AND (DLOS OR LOS OR LIPOOLIGOSACCHARIDE
OR OLIGOSACCHARIDE OR OLIGO SACCHARIDE OR LIPOOLIGO SACCHARIDE
OR OS)
L3 3 SEA ABB=ON PLU=ON L2 AND EXOTOXIN

FILE 'REGISTRY' ENTERED AT 15:50:34 ON 26 AUG 2004

E MONOPHOSPHORYL LIPID A/CN 5
L4 2 SEA ABB=ON PLU=ON "MONOPHOSPHORYL LIPID A"/CN
E TREHALOSE/CN 5
L5 1 SEA ABB=ON PLU=ON TREHALOSE/CN
E ALUM/CN 5
L6 2 SEA ABB=ON PLU=ON ALUM/CN
L7 5 SEA ABB=ON PLU=ON L4 OR L5 OR L6

FILE 'CAPLUS' ENTERED AT 15:50:50 ON 26 AUG 2004

L8 1 SEA ABB=ON PLU=ON L3 AND (L4 OR LIPID A OR TREHALOSE OR
ALUM)

L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ED Entered STN: 29 Jul 1999

ACCESSION NUMBER: 1999:464181 CAPLUS

DOCUMENT NUMBER: 131:86860

TITLE: **Lipoooligosaccharide**-based vaccine for
prevention of **Moraxella (Branhamella)**
catarrhalis infections in mammals

INVENTOR(S): Gu, Xin-Xing; Robbins, John B.

PATENT ASSIGNEE(S): The Government of the United States of America,
Department of Health and Human, USA

SOURCE: PCT Int. Appl., 60 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 9936086 | A1 | 19990722 | WO 1999-US590 | 19990112 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2315746 | AA | 19990722 | CA 1999-2315746 | 19990112 |
| AU 9922212 | A1 | 19990802 | AU 1999-22212 | 19990112 |
| BR 9906902 | A | 20001017 | BR 1999-6902 | 19990112 |
| EP 1047447 | A1 | 20001102 | EP 1999-902170 | 19990112 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |

Searcher : Shears 571-272-2528

| | | | | |
|------------------------|----|----------|-----------------|-------------|
| JP 2002509115 | T2 | 20020326 | JP 2000-539859 | 19990112 |
| US 6685949 | B1 | 20040203 | US 2000-610034 | 20000705 |
| US 2004126381 | A1 | 20040701 | US 2003-688115 | 20031017 |
| US 2004115214 | A1 | 20040617 | US 2003-729027 | 20031205 |
| PRIORITY APPLN. INFO.: | | | | |
| | | | US 1998-71483P | P 19980113 |
| | | | US 1996-16020P | P 19960423 |
| | | | US 1997-842409 | A3 19970423 |
| | | | WO 1999-US590 | W 19990112 |
| | | | US 2000-610034 | A2 20000705 |
| | | | US 2001-789017 | A2 20010220 |
| | | | US 2001-288695P | P 20010503 |
| | | | WO 2001-US32331 | A1 20011016 |

AB A conjugate vaccine for **Moraxella catarrhalis** comprising isolated **lipooligosaccharide** from which esterified fatty acids have been removed, to produce a detoxified **lipooligosaccharide (dLOS)**, or from which **lipid A** has been removed, to produce a detoxified **oligosaccharide (OS)**, which is linked to an immunogenic carrier. The immunogenic carrier is selected from the group consisting of UspA or CD derived from **M. catarrhalis**, tetanus toxoid, HMP derived from *Haemophilus influenza*, diphtheria toxoid, detoxified *P. aeruginosa* toxin A, cholera toxin, pertussis toxin, hepatitis B surface or core antigen, rotavirus VP 7 protein, CRM, CRM197, CRM3201 and respiratory syncytial virus F and G protein. The vaccine is useful for preventing otitis media and respiratory infections caused by **M. catarrhalis** in mammals, including humans.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 15:52:15 ON 26 AUG 2004)

L9 1 S L8

L9 ANSWER 1 OF 1 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
 ACCESSION NUMBER: 1999-444322 [37] WPIDS
 CROSS REFERENCE: 2001-272747 [28]; 2002-163687 [21]; 2003-129162 [12];
 2004-516882 [49]
 DOC. NO. CPI: C1999-130893
 TITLE: Detoxified **lipooligosaccharide**-based vaccine
 for prevention of **Moraxella catarrhalis**
 infections in mammals.
 DERWENT CLASS: B04 D16
 INVENTOR(S): GU, X; ROBBINS, J B
 PATENT ASSIGNEE(S): (USSH) US DEPT HEALTH & HUMAN SERVICES; (GUXX-I) GU X;
 (ROBB-I) ROBBINS J B
 COUNTRY COUNT: 85
 PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|--|------|--------------------|------|----|----|
| WO 9936086 | A1 | 19990722 (199937)* | EN | 60 | |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW | | | | | |
| W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT | | | | | |

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UA UG US UZ VN YU ZW
AU 9922212 A 19990802 (199954)
BR 9906902 A 20001017 (200056)
EP 1047447 A1 20001102 (200056) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
CN 1288384 A 20010321 (200137)
KR 2001034124 A 20010425 (200164)
MX 2000006678 A1 20010201 (200168)
JP 2002509115 W 20020326 (200236) 66
US 6685949 B1 20040203 (200413)
US 2004115214 A1 20040617 (200440)

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---------------|-------------------------------------|---|----------------------------------|
| WO 9936086 | A1 | WO 1999-US590 | 19990112 |
| AU 9922212 | A | AU 1999-22212 | 19990112 |
| BR 9906902 | A | BR 1999-6902 | 19990112 |
| | | WO 1999-US590 | 19990112 |
| EP 1047447 | A1 | EP 1999-902170 | 19990112 |
| | | WO 1999-US590 | 19990112 |
| CN 1288384 | A | CN 1999-802142 | 19990112 |
| KR 2001034124 | A | KR 2000-707737 | 20000713 |
| MX 2000006678 | A1 | MX 2000-6678 | 20000706 |
| JP 2002509115 | W | WO 1999-US590 | 19990112 |
| | | JP 2000-539859 | 19990112 |
| US 6685949 | B1 Provisional Cont of | US 1998-71483P WO 1999-US590 | 19980113 19990112 |
| | | US 2000-610034 | 20000705 |
| US 2004115214 | A1 Provisional Cont of Div ex | US 1998-71483P WO 1999-US590 US 2000-610034 | 19980113 19990112 20000705 |
| | | US 2003-729027 | 20031205 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---------------|-------------|------------|
| AU 9922212 | A Based on | WO 9936086 |
| BR 9906902 | A Based on | WO 9936086 |
| EP 1047447 | A1 Based on | WO 9936086 |
| JP 2002509115 | W Based on | WO 9936086 |
| US 2004115214 | A1 Div ex | US 6685949 |

PRIORITY APPLN. INFO: US 1998-71483P 19980113; US
2000-610034 20000705; US
2003-729027 20031205

AN 1999-444322 [37] WPIDS
CR 2001-272747 [28]; 2002-163687 [21]; 2003-129162 [12]; 2004-516882 [49]
AB WO 9936086 A UPAB: 20040802

NOVELTY - A **lipooligosaccharide (LOS)** isolated from **Moraxella catarrhalis** and detoxified by removal of ester-linked fatty acids to produce detoxified **LOS (dLOS)** or treated to remove **lipid A** to produce **oligosaccharide (OS)** is new.

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DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for a conjugate vaccine for **M. catarrhalis** comprising **dLOS** or **OS**, and a covalently linked immunogenic carrier as above; methods of detoxifying **LOS** isolated from **M. catarrhalis**, by removal of ester-linked fatty acids; methods of making a conjugate vaccine as above.

ACTIVITY - Immunoprotective; Auditory; Antibacterial.

MECHANISM OF ACTION - Vaccine.

USE - The methods are useful for isolation of detoxified **lipooligosaccharide** or **oligosaccharide** from **M. catarrhalis**. The detoxified **lipooligosaccharide** or **oligosaccharide** are useful in conjugate vaccines. The vaccine is useful for protection against **M. catarrhalis** which causes otitis media and respiratory infections.

ADVANTAGE - The invention provides a detoxified **lipooligosaccharide** from **M. catarrhalis**, the major virulence factor for pathogenesis of bacterial infections. When tested by the standard Limulus amebocyte lysate assay, the isolated **LOS** showed 2×10^4 EU/ μ g, whereas the **dLOS** showed 1 EU/ μ g, representing a 20000-fold reduction of toxicity.

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FILE 'HOME' ENTERED AT 15:53:21 ON 26 AUG 2004